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Modulation of anthocyanins in fermented beverages: strategies to improve color and functionality

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Anthocyanins are natural pigments produced by plants, belonging to the group of flavonoids, which have bioactive potential. The presence of conjugated double bonds in their central core gives them the ability to provide color to their sources. In addition, the presence of different substituents at specific positions of this central core differentiates the types of anthocyanins present in flowers, fruits, vegetables, among others. However, these molecules have very low stability, so that several external factors affect their structure and, consequently, their ability to provide color. During the fermentation process for the production of beverages, anthocyanins may follow different metabolic pathways, so that, when degraded into derivatives of lower molecular mass, they lose their colorimetric function. Therefore, it becomes necessary to modulate the fate of anthocyanins present in the must for the production of fermented beverages, in order to prioritize the preservation of their original structure or the formation of more stable derivatives that continue to provide color. In fermented beverages, the enhancement of color leads to an improvement in their functional potential, since the products generated are more stable. Consequently, the product has a higher added value, which generates greater consumer appeal. Based on this, the formation of vinylphenolic pyranoanthocyanins, a much more stable anthocyanin derivative, and the modulation of the medium to promote the co-pigmentation process become replicable strategies for improving the color and functional potential of fermented beverages.

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